

AMENDMENTS TO THE CLAIMS:

Please amend the claims as follows:

1. (Previously presented) An automated meter reading network system comprising:

a plurality of utility meters each one positioned remote from the other ones of the plurality of utility meters;

a plurality of sensors interfaced with each of the plurality of meters so that at least one of the plurality of sensors interfaces with and is positioned adjacent at least one of the plurality of meters to thereby sense utility usage data from each of the plurality of meters;

a communication network;

a plurality of meter data collectors positioned to collect utility usage data from each of the plurality of sensors so that at least one of the plurality of meter data collectors is positioned adjacent at least one of the plurality of utility meters and in communication with at least one of the plurality of sensors which interfaces with the at least one of the plurality of utility meters, the plurality of meter data collectors also being adapted to be positioned in communication with each other through the communication network so that each of the plurality of meter data collectors defines a communication node in the communication network and the plurality of meter data collectors defines a plurality of communication nodes in the network; and

a host computer positioned remote from the plurality of meter data collectors at a utility central station and in communication with each of the plurality of meter data collectors in the communication network so that each one of the plurality of meter data collectors are adapted to communicate with other ones of the plurality of meter data collectors in the communication network, the host computer including network software including instructions that when executed by the host computer cause the host computer to perform the operations of determining a preferred polling sequence route responsive at least in part to a strength of communication signal between the host computer and each of the plurality of meter data collectors and between each of the plurality of meter data collectors along the determined polling sequence route to thereby reduce line-of-site communication problems between each of the plurality of meter data collectors and the host computer, and sending a message packet including routing data to route the message packet along the preferred polling sequence route between the host computer and a

selected meter data collector defining a destination node and along the preferred polling sequence route between the destination node and the host computer, the message packet collecting strength of communication signal data between each node along the preferred polling sequence route to the destination node and along the preferred polling sequence route to the host computer,

the network software including an autosequencer positioned to initiate systematic polling of the plurality of meter data collectors whereby each of the plurality of meter data collectors is individually attempted to be polled by the host computer to determine a strength of communication signal between the host computer and each of the plurality of meter data collectors, and whereby each of the plurality of meter data collectors also attempt to communicate with each other responsive to the autosequencer to determine a strength of communication signal between one of the plurality of meter data collectors and another one of the plurality of meter data collectors, the autosequencer further positioned to determine a communication sequence to each of the plurality of meter data collectors responsive to the strength of communication signal between the host computer and each of the plurality of meter data collectors and responsive to the strength of communication signal between each of the plurality of meter data collectors to define the preferred polling sequence route to each of the plurality of meter data collectors from the host computer, and to update the preferred polling sequence route responsive to strength of communication signal data gathered by each message packet after each subsequent polling sequence to allow the preferred polling sequence route to vary over time.

2. (Previously presented) A system as defined in Claim 1, wherein the message packet includes a payload data section for retrieving utility usage data from at least one of the plurality of meter data collectors, and wherein each of the plurality of meter data collectors includes a collector transceiver positioned to transmit data to the host computer and to other ones of the plurality of meter data collectors through the communication network and to receive data from the host computer and from the other ones of the plurality of meter data collectors through the communication network and a collector controller positioned to control collecting of utility usage data from at least one of the plurality of sensors, to transfer data to and to receive data from the

collector transceiver, and to add the utility usage data to the payload data section responsive to the routing data.

3. (Previously presented) A system as defined in Claim 2, wherein the host computer includes a host radio frequency transceiver positioned to transmit data to and receive data from each of the plurality of meter data collectors and a host controller positioned to control collecting of utility usage data from each of the plurality of meter data collectors, transmitting data to each of the plurality of meter data collectors through the host transceiver, and receiving data from each of the plurality of meter data collectors through the host transceiver.

4. (Previously presented) A system as defined in Claim 1,

wherein the message packet includes a payload data section for retrieving utility usage data from at least one of the plurality of meter data collectors;

wherein each of the plurality of meter data collectors includes a collector transceiver positioned to transmit data to the host computer and to other ones of the plurality of meter data collectors through the communication network and to receive data from the host computer and from the other ones of the plurality of meter data collectors through the communication network, and a collector controller positioned to control collecting of utility usage data from at least one of the plurality of sensors and loading the utility usage data in the payload data section of the message packet;

wherein the host computer includes a host controller positioned to control collecting of utility usage data from each of the plurality of meter data collectors, routing the message packet through the communication network to the destination node to collect the utility usage data through the communication network from at least one of the nodes along the preferred polling sequence route to the destination node, and retrieving the utility usage data from the routed message packet;

wherein each collector controller of the plurality of meter data collectors and the host controller include network software associated with the controller and having a network data communication protocol;

wherein the network data communication protocol includes a preselected application layer; and

wherein the communication network comprises a radio frequency communication network.

5. (Previously presented) A system as defined in Claim 4,

wherein the radio frequency communication network has a frequency in the range of 850-1000 mega-hertz, wherein the frequency continuously changes between a different one of a plurality of preselected frequencies between complete data packet transmissions to thereby define frequency hopping;

wherein the network software of the host controller initiates polling of the plurality of meter data collectors through the frequency hopping within the communications network; and

wherein each of the plurality of meter data collectors responds to the polling by the host controller through the frequency hopping within the communications network along the respective preferred polling sequence route.

6. (Canceled).

7. (Canceled).

8. (Previously presented) A system as defined in Claim 1, wherein the plurality of meter data collectors include a first meter data collector, a second meter data collector in communication with the first meter data collector, and a third meter data collector in communication with at least one of the first and second meter data collectors, wherein the first meter data collector is positioned remote from the host computer to thereby have a greater signal strength than the second meter data collector and the third meter data collector, wherein the second meter data collector is positioned remote from host computer to thereby have a greater signal strength than the third meter data collector, and wherein the network software further includes a raking router to collect utility usage data from the first meter data collector responsive to polling received from

the host computer and to rakingly collect data from each of the second and third meter data collectors responsive to the polling so that utility usage data is collected from each of the first, second, and third meter data collectors responsive to polling the first meter data collector and routed to the host computer.

9. (Previously presented) A system as defined in Claim 8, wherein at least one of the plurality of meter data collector is positioned within the same housing as at least one of the plurality of utility meters, the housing having a glass facing on at least one side thereof, the meter data collector positioned within the housing to transmit through the glass.

10. (Previously presented) A system as defined in Claim 1, wherein the host computer further includes memory having a meter data collector database associated therewith to thereby store meter collector data associated with each of the plurality of meter data collectors, the meter collector data including collector identification, collector physical address, and strength of signal between collectors.

11. (Previously presented) An automated meter reading network system comprising:

- a plurality of sensors adapted to be interfaced with each of a plurality of utility meters each positioned remote from another one of the plurality of utility meters so that at least one of the plurality of sensors interfaces with and is positioned adjacent at least one of the plurality of meters to thereby sense utility usage data from each of the plurality of meters;

- a plurality of meter data collectors positioned to collect utility usage data from each of the plurality of sensors so that at least one of the plurality of meter data collectors is positioned in communication with at least one of the plurality of sensors, the plurality of meter data collectors also being adapted to be positioned in communication with each other through the communication network so that each of the plurality of meter data collectors defines one of a plurality of meter data collectors in a communication network; and

- a host computer positioned remote from the plurality of meter data collectors and in communication with each of the plurality of meter data collectors so that each one of the

plurality of meter data collectors are adapted to communicate with other ones of the plurality of meter data collectors, positioned to poll each of the plurality of meter data collectors, positioned to determine a respective preferred multi-node communication sequence path between the host computer and a selected meter data collector defining a destination node including at least one other of the polled meter data collectors defining at least one intermediate routing node located between the host computer and the destination node, and positioned to send a message packet including routing data to route the message packet along the preferred communication sequence path between the host computer and the destination node via the at least one intermediate routing node, the message packet configured to rakingly collect respective utility usage data from both the destination node and the at least one intermediate routing node located along the preferred communication sequence path so that utility usage data is collected by the message packet from both the destination node and the at least one intermediate routing node along the preferred communication sequence path for delivery to the host computer.

12. (Previously presented) A system as defined in Claim 11, wherein the message packet includes a payload data section for retrieving utility usage data from at least one of the plurality of meter data collectors, and wherein each of the plurality of meter data collectors includes a collector transceiver positioned to transmit data to the host computer and to other ones of the plurality of meter data collectors and to receive data from the host computer and from the other ones of the plurality of meter data collectors, and a collector controller positioned to control collecting of utility usage data from at least one of the plurality of sensors, to transfer data to and to receive data from the collector transceiver, and to add the utility usage data to the payload data section of the message packet responsive to the routing data.

13. (Previously presented) A system as defined in Claim 12, wherein the host computer includes a host transceiver positioned to transmit data to and receive data from each of the plurality of meter data collectors and a host controller positioned to control collecting of utility usage data from each of the plurality of meter data collectors, transmitting data to each of the plurality of meter data collectors through the host transceiver, and receiving data from each of the plurality of meter data collectors through the host transceiver.

14. (Previously presented) A system as defined in Claim 11,

wherein the message packet includes a payload data section for retrieving utility usage data from at least one of the plurality of meter data collectors;

wherein each of the plurality of meter data collectors includes a collector transceiver positioned to transmit data to the host computer and to other ones of the plurality of meter data collectors through the communication network and to receive data from the host computer and from the other ones of the plurality of meter data collectors through the communication network, and a collector controller positioned to control collecting of utility usage data from at least one of the plurality of sensors and loading the utility usage data in the payload data section of the message packet;

wherein the host computer includes a host controller positioned to control collecting of utility usage data from each of the plurality of meter data collectors, routing the message packet through the communication network to the destination node to collect the utility usage data through the communication network from at least one of the nodes along the preferred polling sequence route to the destination node, and retrieving the utility usage data from the routed message packet;

wherein each collector controller of the plurality of meter data collectors and the host controller include network software associated with the controller and having a network data communication protocol;

wherein the network data communication protocol includes a preselected application layer; and

wherein the communication network comprises a radio frequency communication network.

15. (Previously presented) A system as defined in Claim 14,

wherein the radio frequency communication network has a frequency in the range of 850-1000 mega-hertz, wherein the frequency continuously changes between a different one of a

plurality of preselected frequencies between complete data packet transmissions to thereby define frequency hopping;

wherein the controller software of the host controller initiates polling of the plurality of meter data collectors through the frequency hopping within the communications network; and

wherein each of the plurality of meter data collectors responds to the polling by the host computer through the frequency hopping within the communications network.

16. (Previously presented) A system as defined in Claim 15,

wherein the host computer includes network software;

wherein the network software includes an autosequencer positioned to initiate polling of the plurality of meter data collectors whereby each of the plurality of meter data collectors is individually attempted to be polled by the host computer to determine a strength of communication signal between the host computer and each of the plurality of meter data collectors, and whereby each of the plurality of meter data collectors also attempt to communicate with each other responsive to the autosequencer to determine a strength of communication signal between one of the plurality of meter data collectors and another one of the plurality of meter data collectors, and the autosequencer further positioned to determine a communication sequence to each of the plurality of meter data collectors responsive to the strength of communication signal between the host computer and each of the plurality of meter data collectors and responsive to the strength of communication signal between each of the plurality of meter data collectors to define the preferred communication sequence path to each of the plurality of meter data collectors from the host computer.

17. (Previously presented) A system as defined in Claim 16, wherein the autosequencer updates each preferred communication sequence path to allow each preferred communication sequence path to each separate one of the plurality of meter data collectors to vary over time.

18. (Previously presented) A system as defined in Claim 11, wherein the plurality of meter data collectors include a first meter data collector, a second meter data collector in communication with the first meter data collector, and a third meter data collector in communication with at least one of the first and second meter data collectors, wherein the first meter data collector is positioned remote from the host computer to thereby have a greater signal strength than the second meter data collector and the third meter data collector, wherein the second meter data collector is positioned remote from host computer to thereby have a greater signal strength than the third meter data collector, and wherein the network software further includes a raking router to collect the utility usage data from the first meter data collector responsive to polling received from the host computer and to rakingly collect utility usage data from each of the second and third meter data collectors responsive to the polling so that utility usage data is collected from each of the first, second, and third meter data collectors by the same message packet responsive to polling the first meter data collector and is routed to the host computer.

19. (Previously presented) A system as defined in Claim 11, wherein at least one of the plurality of meter data collector is positioned within the same housing as at least one of the plurality of utility meters, the housing having a glass facing on at least one side thereof, the meter data collector positioned within the housing to transmit through the glass.

20. (Original) A system as defined in Claim 11, wherein the host computer further includes a memory having a meter data collector database associated therewith to thereby store meter collector data associated with each of the plurality of meter data collectors, the meter collector data including collector identification, collector physical address, and strength of signal between meter data collectors.

21. (Previously presented) A meter data collector to interface with a utility meter, the meter data collector including:

- a stationary housing adapted to contain a utility meter;

- a sensor positioned to sense utility usage data from the utility meter;

a high power transceiver associated with the housing to transmit utility usage data from the meter data collector and to receive communications remote from the stationary housing in a medium to high range;

a collector controller positioned within the housing to control data communication to and from the high power transceiver and to provide bidirectional radio frequency communication between an adjacent at least one other meter data collector to form a communication network, and to control collecting of local utility usage data from the sensor responsive to a remote command from a requesting remote host computer; and

a memory positioned within the stationary housing and associated with and in communication with the controller to store data therein, the memory including network software to receive a message packet including a payload carrying utility usage data from the at least one other meter data collector, to combine the local utility usage data with the utility usage data from the at least one other meter data collector, and to communicate the utility usage data remotely through the communication network to the requesting remote host computer along a route determined by the requesting remote host computer.

22. (Original) A meter data collector as defined in Claim 21, wherein the network software includes a preselected network data communication protocol, wherein the network data communication protocol includes a preselected application layer, and wherein the communication network comprises a radio frequency communication network.

23. (Previously presented) A meter data collector as defined in Claim 22, wherein the radio frequency communication network has a frequency in the range of 850-1000 mega-hertz, wherein the frequency continuously changes between a different one a plurality of preselected frequencies between complete data packet transmissions to thereby define frequency hopping, wherein a remote host computer controller initiates polling of the meter data collector through the frequency hopping within the communications network, and wherein the collector controller is positioned to respond to the polling by the host computer controller through the frequency hopping within the communications network.

24. (Previously presented) A meter data collector as defined in Claim 23, wherein the host computer includes network software which includes an autosequencer to initiate polling by the host computer controller and to initiate polling of at least one of a plurality of the meter data collectors whereby each of the plurality of meter data collectors is individually attempted to be polled by the host computer to determine a strength of communication signal between the host computer and each of the plurality of meter data collectors, and whereby each of the plurality of meter data collectors are positioned to also attempt to communicate with each other responsive to the autosequencer to determine a strength of communication signal between one of the plurality of meter data collectors and another one of the plurality of meter data collectors to thereby assist in determining a preferred communication sequence path to each of the plurality of meter data collectors from the host computer.

25. (Original) A meter data collector as defined in Claim 24, wherein the autosequencer updates the preferred communication sequence path to allow the preferred communication sequence path to vary over time.

Claims 26-42 (Canceled).